

## Examrace

# Solid Waste: Characteristics of Solid Waste and Physical Characteristics

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## Characteristics of Waste

### Physical Characteristics

- Moisture Content
- Density
- Field Capacity
- Permeability

### Chemical Characteristics

- Proximate Analysis
- Ultimate Analysis
- Fusing point of Ash
- Heat Content

## Physical Characteristics

- Moisture Content- It is the weight of moisture per unit weight of wet or dry matter
- Density- It is mass per unit volume ( $\text{kg}/\text{m}^3$ )
- Field Capacity- It is the amount of moisture that is kept retained by a solid waste against the downward pull of gravity
- Permeability- It is the hydraulic conductivity of compacted solid waste

## Chemical Characteristics

### Proximate Analysis

It gives:

- Moisture content
- Fixed Carbon
- Ash
- Volatile Matter

## Proximate Analysis of Municipal Solid Waste

Components	Value percent	
	Range	Typical
Moisture	15-40	20
Volatile Matter	40-60	53
Fixed carbon	5-12	7
Glass, ash and metal	15-30	20

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- Ultimate Analysis: Determines the percent C (carbon) , H (hydrogen) , O (oxygen) , N (nitrogen) , S (sulphur) , and ash in the waste.
- Fusing point of ash- Temperature at which clinkers are formed by fusion and agglomeration from the resulting ash.
- Clinkers are formed at a temperature of 1100 - 1200°C.
- Heat Content: Amount of heat generated from combustion of a unit weight of a substance. It is given by kcal/kg.

### Multiple Choice Questions

1. . The amount of moisture that is kept retained by a solid waste against the downward pull of gravity is known as

1. Moisture content
2. Field Capacity
3. Permeability
4. Porosity

Answer: b

2. C, H, N and S is determined by

1. Proximate analysis
2. Ultimate analysis
3. Fusing point
4. None of the above

Answer: b

3. which among the following is determined by heating 1 gm of sample at a temperature of 950°C for 7 minutes in the absence of air

1. Volatile matter
2. Moisture content
3. Ash
4. Fixed carbon

Answer: a

4. Clinkers are formed at a temperature of

1. 500 - 600°C
2. 600 - 1000°C
3. 1000 - 1100°C
4. 1100 - 1200°C

Answer: d

#Characteristics of Solid Waste

#UGC NTA NET

#Physical characteristics

#chemical characteristics

#proximate analysis

## #Ultimate analysis

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